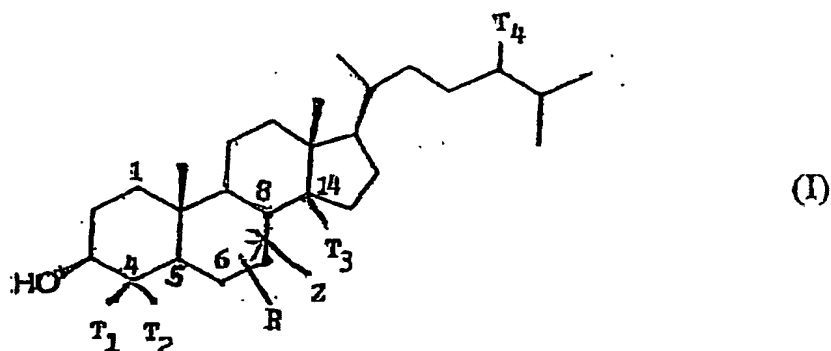


CLAIMS

1. A sterol-based compound, characterized in that it corresponds to formula (I)

5



in which formula the carbon in position 4 of the cholesterol skeleton bears moieties T_1 and T_2 , which may be, independently, H or CH_3 with CH_3 in the α and/or β position, the carbon in position 24 bears a moiety T_4 which represents H, CH_3 or C_2H_5 , the carbon in position 14 bears a moiety T_3 , which may be H or a β CH_3 , one of the bonds between carbons 5 and 6, on the one hand, and 7 and 8, on the other hand, may be a double bond, whereas the other is a single bond, and in which:

- Z represents, in position 5 or 8, either H or OH, OH being able to be borne only by a carbon that does not bear a double bond; and
- R represents in position 6 or 7, on a carbon not bearing a double bond, the substituent of formula $-Q_0-Q_1$,

in the formula of which substituent

$-Q_0-$ represents the radical of formula (II):

25 $-X-(CH_2)_{n_0}[Y_1-(CH_2)_{n_1}]_{p_1}[Y_2-(CH_2)_{n_2}]_{p_2}[Y_3-(CH_2)_{n_3}]_{p_3}[Y_4-(CH_2)_{n_4}]_{p_4}[Y_5-(CH_2)_{n_5}]_{p_5}-$ (II)

in which formula (II):

- p_1, p_2, p_3, p_4 and p_5 are integers independently equal to 0 or 1,
- n_0, n_1, n_2, n_3, n_4 and n_5 are independent integers such that:

5

$$1 \leq n_0 \leq 4$$

$$0 \leq n_1, n_2, n_3, n_4, n_5 \leq 4$$

- -X- represents -S-, -O-, -CH₂- or -NR₃-, in which R₃ is H or a C₁-C₄ alkyl radical, or alternatively a heterocycle

10



- -Y₁-, -Y₂-, -Y₃-, -Y₄- and -Y₅- represent, independently of each other, -S-, -O-, -C- or -NR₃-, in which R₃ has the meaning given above;

15

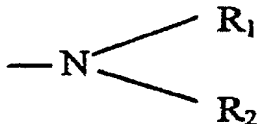
and in which formula

- Q₁ represents an indole nucleus, a morpholine or thiomorpholine nucleus attached via its nitrogen atom, a heterocycle

20



in which R₁ represents H, COCH₃, a C₁-C₄ alkyl radical, or



25

in which R₁ has the meanings given above and R₂ represents H or a C₁-C₄ alkyl radical, R₁ and R₂ together possibly

constituting a piperidine, pyridine or piperazine ring optionally substituted with a C₁-C₄ alkyl radical, or alternatively a pyrrole or pyrrolidine heterocycle comprising a nitrogen atom and 4 carbon atoms, with the
5 proviso that:

. if -X- = -NH- and Q₁ = N $\begin{matrix} \swarrow & \text{C}_1\text{-C}_4 \text{ alkyl} \\ \searrow & \text{C}_1\text{-C}_4 \text{ alkyl} \end{matrix}$, at least

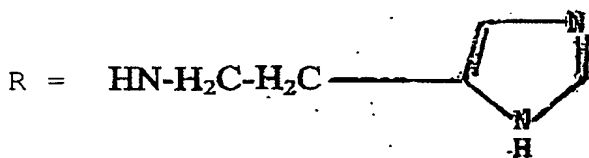
one of the numbers p₁, p₂, p₃, p₄ and p₅ is other than 0;
and

10 . if -X- = -CH₂-, n₀ = 1 and all the numbers p₁, p₂, p₃, p₄ and p₅ are zero, Q₁ is other than -NH₂.

2. The compound as claimed in claim 1, characterized in that it corresponds to formula (I) in which the bond between
15 carbons C₇ and C₈ is a double bond, R = NH-(CH₂)₃-NH-(CH₂)₄-NH₂ and T₁ = T₂ = T₃ = H.

3. The compound as claimed in claim 1, characterized in that it corresponds to formula (I) in which the bond between
20 carbons C₇ and C₈ is a double bond, T₁ = T₂ = T₃ = H and R = -NH-(CH₂)₃-NH-(CH₂)₄-NH-(CH₂)₃-NH₂.

4. The compound as claimed in claim 1, characterized in that it corresponds to formula (I) in which the bond between
25 carbons C₇ and C₈ is a double bond, T₁ = T₂ = T₃ = H and



5. The compound as claimed in claim 1, characterized in

that it corresponds to formula (I) in which the bond between carbons C₇ and C₈ is a double bond, T₁ = T₂ = T₃ = H and R = -NH-(CH₂)₄-NH₂.

6. The compound as claimed in claim 1, characterized in that it corresponds to formula (I) in which the bond C₇-C₈ is a double bond, T₁ = T₂ = T₃ = H and R = -NH-(CH₂)₂-O-(CH₂)₂-O-(CH₂)₂-NH₂.

7. The compound as claimed in claim 1, characterized in that it corresponds to formula (I) in which the two bonds C₅-C₆ and C₇-C₈ are single bonds, Z represents OH in position 5 and T₁ = T₂ = T₃ = H, R being in position 6 and having the same meaning as in claim 3.

8. The compound as claimed in claim 1, characterized in that it corresponds to formula (I) in which the two bonds C₅-C₆ and C₇-C₈ are single bonds, Z represents OH in position 5 and T₁ = T₂ = T₃ = H, R being in position 6 and having the same meaning as in claim 4.

9. The compound as claimed in claim 1, characterized in that it corresponds to formula (I) in which the two bonds C₅-C₆ and C₇-C₈ are single bonds, Z represents OH in position 5 and T₁ = T₂ = T₃ = H, R being in position 6 and having the meaning



10. The compound as claimed in claim 1, characterized in that it corresponds to formula (I) in which the two bonds C₅-

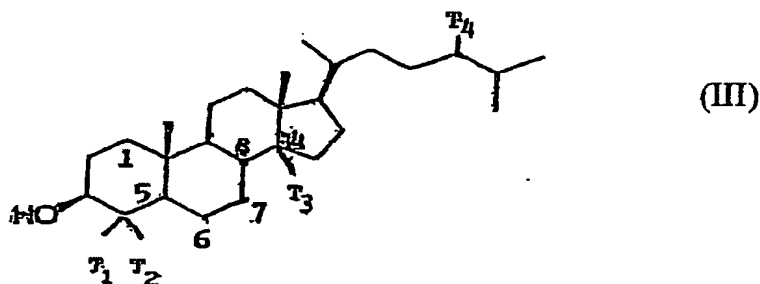
C₆ and C₇-C₈ are single bonds, Z represents OH in position 5 and T₁ = T₂ = T₃ = H, R being in position 6 and having the meaning



11. The compound as claimed in claim 1, characterized in that it corresponds to formula (I) in which the two bonds C₅-C₆ and C₇-C₈ are single bonds, Z represents OH in position 5 and T₁ = T₂ = T₃ = H, R being in position 6 and having the same meaning as in claim 2.

12. A process for preparing a compound as claimed in claim 1, characterized in that:

15 - in a first step, meta-chloroperoxybenzoic acid, dissolved in a solvent A, is reacted with a compound corresponding to formula (III)



20 in which formula the carbon in position 4 of the cholesterol skeleton bears moieties T₁ and T₂ which may be, independently, H or CH₃ with CH₃ in the α and/or β position, the carbon in position 24 bears a moiety T₄ that represents H, CH₃ or C₂H₅, the carbon in position 14 bears a moiety T₃, which may be H or a β CH₃, at least one of the bonds between carbons 5 and 6, on the one hand, and 7 and 8, on the other hand, is a double bond,

25

the compound of formula III being dissolved in a solvent B that is miscible with solvent A,

- in a second step, the epoxy compound obtained in the first step, dissolved in a solvent C in the presence of an activator D, is reacted with an amine of formula Q_0Q_1 , Q_0 and Q_1 having the meanings given in claim 1, dissolved in a solvent E that is miscible with the solvent C.

13. The process as claimed in claim 12, characterized in that the product obtained in the first step is purified before using it for the second step.

14. The process as claimed in either of claims 12 and 13, characterized in that lithium perchlorate is used as activator D.

15. The process as claimed in one of claims 12 to 14, characterized in that methylene chloride is used as solvent A.

16. The process as claimed in claim 15, for the preparation of a compound of formula (I) bearing an OH on the carbon in position 5 and comprising a double bond between carbons 7 and 8, characterized in that a mixture of methylene chloride and of aqueous Na_2CO_3 solution is used as solvent B.

17. The process as claimed in claim 15, for the preparation of a compound of formula (I) bearing an OH on the carbon in position 5 and comprising a single bond between carbons 7 and 8, characterized in that methylene chloride is used as solvent B.

18. The process as claimed in either of claims 16 and 17,

characterized in that anhydrous ethanol or pyridine is used as solvent C, the reaction of the second step being performed at reflux, at atmospheric pressure.

5 19. A medicament, characterized in that it comprises, in a pharmaceutically acceptable vehicle, at least one compound as claimed in claim 1.

20. The medicament as claimed in claim 19, characterized in
10 that it is used to increase the dendritogenesis of live mammalian cells.

21. The medicament as claimed in claim 20, characterized in that it is used to trigger neuritogenesis on nerve cells or
15 precursors thereof.

22. The medicament as claimed in claim 21, characterized in that it is used to combat human neurodegenerative diseases, especially amyotrophic lateral sclerosis, Alzheimer's
20 disease and Parkinson's disease.

23. The medicament as claimed in claim 19, characterized in that it is used to activate the immune system of a live organism.
25

24. The medicament as claimed in claim 19, taken alone or in combination with claim 23, characterized in that it is used for the production of secretory vacuoles in tumoral cells of a live organism.
30

25. The medicament as claimed in claim 24, characterized in that it is used to regress a mammalian cancer tumor.

26. The medicament as claimed in one of claims 19 to 25, characterized in that it is administered by injection.

27. The medicament as claimed in claims 25 and 26, taken
5 simultaneously, characterized in that it is injected in the region of the tumor to be treated.

28. The medicament as claimed in claims 19 to 27,
characterized in that it is administered at doses ranging
10 from 8.5 ng to 1.7 μ g per gram of live organism.